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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,235	06/14/2001	Akira Enokihara	5077-000055	7554

27572 7590 07/24/2002

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EXAMINER
TAKAOKA, DEAN O

ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 07/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	09/881,235	ENOKIHARA ET AL.	
	Examiner	Art Unit	
	Dean O Takaoka	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 June 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1-1) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: reference number **52A** (Fig. 17) does not appear to be included the specification (e.g. page 47). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

1-2) The drawings are objected to because it appears reference number **36** (Fig. 20) should be labeled as reference number 535 (e.g. page 2). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

1-3) The applicant is required to provide a copy of the drawings with proposed drawing changes marked in red ink as required by 37 CFR 1.121(d).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2-1) Claims 7 – 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7 – 9 recite the limitations of a "first portion" and/or "second portion" with respect to the "case" in page 53. There is insufficient antecedent basis for this limitation in the claim.

It does not appear that the specification and/or drawings clearly identify which parts of the case would comprise the "first portion" and "second portion" thus there is insufficient antecedent basis for this limitation in the claim.

2-2) Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation of a "conductor member" and "another portion of the conductor member" with respect to the "conductor probe" in page 54. There is insufficient antecedent basis for this limitation in the claim.

It does not appear that the specification and/or drawings clearly identify which parts would comprise the "conductor member" and where the "conductor probe" extends "from a portion of the conductor member...to reach another portion of the conductor member" thus there is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 – 11, and 13 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishikawa et al. (4,639,699).

Claims 1 and 13:

Nishikawa et al. (Fig. 15) shows a resonator comprising: a columnar dielectric (4); and a shielding conductor surrounding the dielectric (conductive film 42), the resonator using a resonant mode (TM mode – cols. 1, 2 all) causing generation of a current crossing a corner of the columnar dielectric (inherent in that the resonator resonates within all parts of the interior and inherently crossing the corner of the interior cavity), where the shielding conductor (42) is formed in direct contact with the surface of the dielectric (shown in Fig. 15).

Claim 3:

Where the resonator is in the shape of a cylinder (Figs. 15,16) or square pole (col. 10, lines 53-66).

Claim 4:

Where the shielding conductor is a metallized layer formed on the surface of the dielectric.

Claims 5 and 10:

Where the resonant mode is a TM mode (TM mode – cols. 1, 2 all).

Claims 6 and 14:

A resonator (Fig. 32) comprising: a dielectric (66); and a case for housing the dielectric (comprising main portion 81 and lid 82), where part of the case is constructed of conductive foil and the conductive foil (69, 72); disclosed as conductive film which the Examiner interprets as a conductive foil) partly shields the dielectric electromagnetically (inherent where any conductive film would provide some degree of electromagnetic shielding).

Claims 7 and 8:

The resonator where the case includes, in so far as can be understood, a first and second portion (e.g. case or main body portion 81 and lid 82), the conductive foil (69, 72) is interposed between the first portion and the second portion (e.g. where 69 is interposed between the case 81 and lid 82) and the dielectric is electromagnetically shielded by the first portion and the conductive foil (where the first portion (e.g. lid 82) and the conductive foil 69 inherently electromagnetically shields the dielectric 66 as the dielectric is contained below both layers) and where conductive foil (69) is interposed between the dielectric (66) and the second portion of the case (e.g. where 69 is interposed between the main body portion of the case 81).

Claim 9:

Further comprising an elastic layer (151 rubber shown on top and sides) interposed between the conductive foil (72) and the second portion (81).

Claims 11 and 15:

A resonator (Fig. 35) or radio frequency filter (where the resonator is the most fundamental filter inherently for radio frequencies) comprising: a dielectric (4) having a hole (where 165 is inserted into the hole of the dielectric), a case surrounding the dielectric (161); and a conductor rod (166 shown in Fig. 33 but not labeled and attached to 165, disclosed as a metallic portion, hence conductor rod) inserted into the hole of the dielectric, the insertion depth of the conductor rod being variable, where a resonant frequency is adjusted with the insertion depth of the conductor rod into the hole (col. 18, line 27 to col. 19, line 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. and El-Sharawy (U.S. Patent No. 6,169,467).

Claim 2:

Nishikawa et al. shows the resonator in the reasons for rejection of claim 1 above.

Nishikawa et al. shows the well-known resonator where the inner dielectric material (4) has a lower dielectric constant than the outer dielectric material (41 – col. 10, lines 6-11) but does not show where the inner dielectric material (4) has a higher dielectric constant than the outer dielectric material.

El-Sharawy (Figs. 8 and 9) shows a similar well-known resonator where the dielectric includes a center portion and an outer portion covering at least part of the inner portion, and the dielectric constant of the center portion (62) has a higher dielectric constant than the outer portion (60 – col. 10, lines 48-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the well-known resonator disclosed by Nishikawa et al. with the well-known art-recognized equivalent resonator disclosed by El-Sharawy. Such a modification would have been a mere substitution of well-known art-recognized

equivalent resonators since both Nishikawa et al. and El-Sharawy teach resonators with a plurality of different dielectric constants, thus suggesting the obviousness of the modification.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa et al. and Liang et al. (U.S. Patent No. 5,805,033).

Claim 16:

Nishikawa et al. (Figs. 24 – 26) shows a well-known resonator filter (where the resonator filter of Nishikawa et al. is inherently used for radio frequencies) having a plurality of resonators (106 - 108) and an input stage resonator (106) having a dielectric and receiving a radio frequency signal and an output stage resonator and outputting a radio frequency (108 – inherent where Nishikawa et al. shows input and output connectors 125, 126 used for input and output of the radio frequency signal) to an external device (inherent where the RF filter would inherently output the signal to some other device), the radio frequency filter comprising; a case (120) surrounding the plurality of resonators for electromagnetically shielding the respective resonators (inherent in that the case is disclosed as a conductive film which inherently would provide electromagnetically shielding); a partition formed between resonators (e.g. where partition 109 (of resonator 107) is between resonator elements 106 and 108) of which electromagnetic fields are coupled with each other among the plurality of resonators (e.g. where 109 are coupling elements); and an interstage coupling window

formed at the partition (where the coupling portion 109 does not need to extend the full length, hence window: col. 14, lines 50-54).

Nishikawa et al. does not show an interstage coupling degree adjusting member for adjusting the area of the inter-stage coupling window.

Liang et al. (Fig. 1) shows a well-known resonator filter with a tuning element (109) to adjust the coupling.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the resonator filter disclosed by Nishikawa et al. with the tuning element to adjust coupling disclosed by Liang et al. Such a modification would have realized the advantageous benefit of being able to control coupling without disassembly of the filter (Liang et al. – col. 1, lines 23-29) thus suggesting the obviousness of the modification.

Conclusion

Due to the indefinite nature of claim 12, no art has been applied.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Prager et al. – shows a dielectric resonator.

Scott – shows a resonator filter.

Sparagna – shows a dielectric resonator filter.

Gannon et al. – shows a RF resonator filter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6251 for regular communications and (703) 308-6251 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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July 16, 2002